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(54) **INTEGRAL SUN GEAR COUPLING**

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F16H 57/08 (2006.01)

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(58) **Field of Classification Search** ..... None
See application file for complete search history.

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(57) **ABSTRACT**

A coupling system for connecting a sun gear to a shaft within a planetary gear train, includes a sun gear coupling connecting the sun gear to the shaft. The sun gear coupling has at least one undulant flexible section joined to an inflexible spindle for accommodating misalignment between the sun gear and the shaft. The flexible section comprises a cylindrical ring having a diameter greater than the diameter of the spindle, and joined to the spindle by two longitudinally spaced apart diaphragms. The juncture between the diaphragms, the ring, and the spindle is curved in cross section on an outer side to improve flexibility and minimize stress concentrations, and the inner sides of the diaphragms are straight edges which result in a non-symmetric contour of the diaphragm walls.

12 Claims, 3 Drawing Sheets